



Module – Smoke: Knowing the Risks

Overview

This module is intended to raise awareness of the components of smoke, its physiological and mental effects, and ways to recognize, diminish, and recover from these effects.

Exercise

Read the scenario and in small groups answer the questions below. The most junior firefighter will answer the first question.

Scenario:

You have been digging direct line for five days in preparation for a burnout which you are doing right now. The crew you are running has been exposed to moderate levels of smoke during that time. Some of them are getting the camp crud and everyone has some level of respiratory irritation, including you. The camp sits in an inversion and never has completely clean air. The burnout started 4 hours ago and is going well. Your crew has been assigned to hold the line, the smoke has been blowing onto your holders since the burnout started and much coughing is going on among them and is getting worse.

Your squad leader says she has a hammering headache. You ask her if she is okay and she says she is fine and to mind your own business and get her an aspirin now so she can take her squad to mopup 500 feet in and use pulaskis to fell the huge snags on the line. You give her a bottle of aspirin which she is unsuccessfully trying to open. You ask her how her holders are doing and she says the sawyers and mopup squad are felling snags in the middle of the fire and mopping up the stumps. You can't hear any chainsaws and everyone appears to be on the holding line. What will you do?

Questions to answer:

1. Is your squad leader possibly impacted by smoke effects and capable of leading others in a dangerous environment?
2. What events and indicators in the scenario give clues to the possibility of a smoke induced change in mental state?
3. What are your options to begin a recovery?

Use the chart below to help with your answers.



STUDENT WORKBOOK



CO in atmosphere (ppm)	COHb in blood (%)	Signs and Symptoms
10	2	Asymptomatic
70	10	No appreciable effect, except shortness of breath on vigorous exertion; possible tightness across the forehead;
120	20	Shortness of breath on moderate exertion; occasional headache with throbbing in temples
220	30	Headache; irritable; easily fatigued; judgment disturbed; possible dizziness; dimness of vision.
350-520	40-50	Headache, confusion; collapse; fainting on exertion
800-1220	60-70	Unconsciousness; intermittent convulsion; respiratory failure, death if exposure is long continued
1950	80	Rapidly fatal

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Module Evaluation QR code



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